Travis Zhang

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Education

Cornell University, College of Engineering — **Ithaca, New York**
Bachelor of Science in Computer Science — *Sep 2020 – May 2024*
GPA: 3.931/4.0

- **Relevant Courses:** Multivariable Calculus, Discrete Structures, OOP and Data Structures, Intro to ML, Functional Programming and Data Structures*, Differential Equations*, Linear Algebra*

Hamilton High School — **Chandler, Arizona**
GPA: 4.927/5.0 — *July 2016 – May 2020*

- **Relevant Courses:** Multivariable Calculus, Differential Equations, Linear Algebra, AP Java, AP Physics C: Mechanics and E & M
- **Honors:** Steve Sanghi Scholarship Award, Andy Grove Intel Scholarship, Impact Scholarship, National Honor Society Semifinalist Scholarship, Worth & Dot Howard Foundation Scholarship

*: Current courses

Experience

ASU Robust Machine Learning Group — **Tempe, Arizona**
Student Researcher — *April 2019 – Present*

- Applied transformation-invariant constraints on adversarial training using Tensorflow to improve robustness of Convolutional Neural Network (CNN)
- Implemented 3 algorithms to reduce time for loss to converge for proposed methodology (up to 60% reduction)
- Attacked a Deep Reinforcement Learning agent by designing a perturbed physical object in its environment using Pytorch

ASU Signal, Information, Networks, and Energy Laboratory — **Tempe, Arizona**
Student Researcher — *Sep 2017 – April 2018*

- Created program to temporally and spatially interpolate power outputs of solar panels using Scikit-learn, Pandas, and Numpy
- Analyzed patterns in cloud coverage and temperature to account for fluctuations in power output

Activities

Cornell Data Science Project Team — **Ithaca, New York**
Incoming Member for the Intelligent Systems Subteam — *Nov 2020 – Present*

Associate of Computer Science Undergraduates — **Ithaca, New York**
Academic Officer — *Oct 2020 – Present*

- Helped organize and host academic events including Research Night and internship/research panels

Hamilton Robotics Team — **Chandler, Arizona**
Head of Electrical, Head of Communications — *Aug 2016 – May 2020*

- Designed robot using Solidworks and used CNC router and mill to build precise parts
- Programmed autonomous, teleoperated, and vision code for robot using Java and FRC WPI Library

Mathworks Math Modeling Challenge — **Chandler, Arizona**
Team Leader — *Jan 2019 – Feb 2020*

- Developed and implemented mathematical models in Python to solve real-world problems
- Wrote a 15+ page research paper to report experimental designs and results

Personal Projects

HackOurCampus Hackathon — *Aug 2020 – Sep 2020*

- Designed iOS app using SwiftUI that reminded students to bring both COVID-related and personal items
- Implemented Geofencing technologies to encourage social distancing and track when to send out reminders

National Honor Society App — *July 2019 – Jan 2020*

- Developed both iOS (Swift) and Android (Java) mobile application
- Created personalized login system using student IDs and incorporated Google Firebase to send and retrieve information on app

CUSD Equity Symposium App — *Nov 2018 – May 2020*

- Produced iOS app for the Chandler school district's annual equity symposium
- Integrated Google Firebase to build a login system and to store symposium information in a database

Skin Cancer Diagnosis using Neural Networks — *Aug 2018 – April 2019*

- Built CNNs and Generative Adversarial Networks in Keras + Tensorflow to improve computer diagnosis of skin cancer

Skills and Interests

Skills: Java, Python, Swift, C++, Keras, Pytorch, Tensorflow, Numpy, Pandas, Git/Github, HTML, CSS, LaTeX, Scikit-learn, Firebase
Miscellaneous Skills: Photoshop, Autodesk Inventor, Solidworks CAD, Welding, CNC Machine, Soldering, Milling
Interests: Photography, Tennis, Snowboarding, Adversarial Attacks in Machine Learning, Robotics, Airplanes